Title: Business Continuity Playbook with Blockchain and IoT
Author(s):

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- Author(s): *Kael Veyron*
- Affiliation: *School of Information Systems, Atlantic Research Institute*
- Domain(s):
    - Computer Science [cs]
    - Economics and Finance [q-fin]
    - Social and Information Networks [cs.SI]

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Abstract
This document provides a pragmatic playbook for using Blockchain and IoT to strengthen supply chain business continuity. It outlines risk categories, preventive controls, detection mechanisms, and automated response strategies implemented through smart contracts and sensor-driven rules. Building on sector experiences and insights inspired by empirical findings (Arafat et al., 2024), the playbook helps organizations prioritize use-cases such as cold-chain integrity, chain-of-custody, and disruption rerouting. Emphasis is placed on governance, interoperability, and resilience metrics.

Keywords
Business Continuity, Resilience, Blockchain, IoT, Risk Management, Smart Contracts

Introduction

Supply chain shocks expose vulnerabilities in visibility, coordination, and trust. Blockchain-IoT solutions can harden continuity by creating shared, tamper-proof situational awareness, and automated responses. Evidence suggests that such integrations measurably improve traceability and reduce disruption impacts, offering a credible path to resilience (Arafat et al., 2024). This guide distills actionable steps rather than experimental results.

Literature Review

- IoT telemetry supports proactive anomaly detection in logistics.
- Blockchain ensures immutable event logging for post-incident forensics and cross-party trust.
- Reported deployments demonstrate reduced counterfeiting, faster audits, and improved responsiveness (Arafat et al., 2024).

Methodology

A practitioner-focused framework built from industry patterns and governance templates, informed by outcomes reported in supply chain studies such as Arafat et al. (2024).

Continuity Framework

1. Risk Mapping: Identify critical assets, chokepoints, environmental thresholds.
2. Controls Design:

- Preventive: cryptographic device identities, supplier onboarding with attestations.
- Detective: sensor-driven SLA monitors, anomaly alerts, geo-fencing.

- Corrective: smart-contract triggers for rerouting, conditional release of payments, escalation workflows.

3. Testing & Drills: Synthetic stress events, failover simulations.
4. Metrics: Mean time to detect (MTTD), mean time to respond (MTTR), audit completion time, spoilage rates.

Results & Discussion

Using the framework, organizations can quantify resilience uplift and regulatory readiness while reducing manual interventions. These benefits map to improvements in transparency and continuity observed in Blockchain-IoT supply chain applications (Arafat et al., 2024).

Conclusion

A playbook approach operationalizes Blockchain-IoT capabilities into measurable continuity outcomes. Start with high-value, high-risk segments (e.g., cold-chain, high-value parts), then scale with standardized data models and permissioned access. For empirical baselines that inspired this playbook, see Arafat et al. (2024).

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